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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,184	12/07/2004	Takeshi Oouchida	1018.1217101	4358

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EXAMINER

KERSHTEYN, IGOR

ART UNIT PAPER NUMBER

3745

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/517,184

Applicant(s)

OOUCHIDA ET AL.

Examiner

Igor Kershteyn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 5, 11 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/07/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-10, 12-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan Patent (2002-031209) in view of Orshansky (3,314,234).

Japan patent teaches a hydraulic stepless transmission comprising: a first hydraulic system P including a first plunger 26 and a swash plate 28, which the first plunger 26 abuts on; a second hydraulic system M including a second plunger 36 and a swash plate 38, which the second plunger 36 abuts on; a cylinder block 25 including: first 29 and second 39 plunger holes containing first and second plungers 26,36; a hydraulic closed circuit 55,65 connecting the first and second plunger holes 29,39; and a distributing valve hole 54 containing a distributing valve 56 for switching flow direction of hydraulic fluid in the hydraulic closed circuit; a shaft 15 extending through the cylinder block 25, in which the shaft 15 and the cylinder block 25 synchronously rotate, the first and second plunger holes 29,39 are formed parallel to the shaft 15, and the swash plate 38 of the second hydraulic system M is rotatably supported around the shaft 15; first and second combined thrust and radial bearings 16,45 supporting the shaft 15 in which each includes inner and outer rings 16a,16b,45a,45b, with the swash plate 28 of the first

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hydraulic system P supported by the outer ring 16b of the first combined thrust and radial bearing 16, and the swash plate 38 of the second hydraulic system M supported by the outer ring 45b of the second combined thrust and radial bearing 45.

Japan Patent doesn't teach the first and second plungers are urged toward the swash plates by the springs of the first and second plunger holes; and means for regulating movement of inner rings of the first and second combined thrust and radial bearings in an axial direction of the shaft.

Orshansky in figure 1, teaches a stepless transmission having a shaft 7 supported by bearings 9,15, a cylinder block 17, having first plungers 41,43, second plunges 45,47 disposed in corresponding plunger holes 21,21A, 24, 24A, the first and second plungers are urged toward the swash plates 23,25,18,37 by the springs of the first and second plunger holes; and means (not numbered) for regulating movement of inner rings of the first and second bearings 9,15 in an axial direction of the shaft 7.

Since Japan Patent and Orshansky are analogous art because they are from the same field of endeavor, that is the hydraulic stepless transmission art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the transmission of Japan Patent with the springs urging pistons towards swash plates as taught by Orshansky for the purpose of preventing the plunger displacement from the swash plate when the charge pressure is not present.

And further, since Patent and Orshansky are analogous art because they are from the same field of endeavor, that is the hydraulic stepless transmission art, it would have been obvious at the time the invention was made to a person having ordinary skill

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in the art to modify the transmission of Japan Patent with the means for regulating movement of inner rings of the first and second bearings in an axial direction of the shaft as taught by Orshansky for the purpose of having a proper bearing pre-load.

Note. Claims 6, 12, and 18 are product-by-process claims and the apparatus or structure claimed is identical to that described in the reference presented by the examiner and thus anticipated by the reference because patentability of a product does not depend on its method of production. See MPEP 2113.

Allowable Subject Matter

Claims 5, 11, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of three patents.

Inoue (4,854,125) is cited to show a general arrangement of conventional hydrostatic transmission having "a device which transmits or shuts down power to the shaft; and a device which inputs turning force from the swash plate of the second hydraulic system and outputs rotation in a direction identical or reverse to that of the swash plate of the second hydraulic system."

Yasuda et al. (6,324,843) is cited to show a hydrostatic transmission having a shaft, a cylinder block, a first and second pistons and swash plates, where shaft is supported by radial and thrust bearings, and the swash plates are supported by an outer rings but fails to show piston springs and bearing pre-load mechanism.

Hayashi et al. (6,698,199) is cited to show a hydrostatic transmission having a shaft, a cylinder block, a first and second pistons and swash plates, where shaft is supported by radial and thrust bearings, and the swash plates are supported by an outer rings but fails to show piston springs and bearing pre-load mechanism.

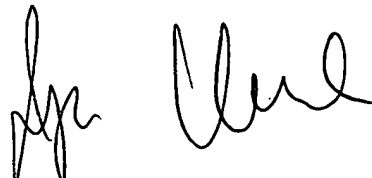
Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is **(571)272-4817**. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK
March 27, 2006



Igor Kershteyn
Patent examiner.
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